Mine file

April 24, 1987

TO: File

FROM: David M. Wham, Reclamation Hydrologist

RE: Hydrology Recommendations, Field Inspection of Sahara Mine, March 17, 1987, Energy Fuels Nuclear, M/015/026, Emery County

The major hydrology concern noted onsite centers around the undisturbed stream channel diversion around the two celled mine water discharge/sediment ponds. Originally, the operator's plan called for routing both mine water discharge and the undisturbed canyon drainage through a two celled mine discharge/sediment pond. At the Division's request, the plan was modified to eliminate the mixing of disturbed and undisturbed waters by routing the undisturbed flow into an unlined diversion ditch located around the perimeter of the dams. Review of our files indicates that the operator had difficulty maintaining this system during periods of high spring runoff.

At the time of our site visit, both the north and south diversions were exhibiting severe erosion via downcutting and bank sloughing. The southern diversion has a headcut with a vertical drop of four to five feet. Both cells of the pond were essentially empty.

Since no plans or hydrologic design parameters for the ponds are on file with our office, I am unable to make specific design recommendations at this time. However, considering the past and projected periods of inactivity at this site, I recommend modifying the current diversion system as follows:

1) Channel all runoff into the upper pond.

2) Regrade and seed the existing diversions.

3) Construct a riprapped spillway to convey excess runoff from the first pond cell to the second.

4) Construct a riprapped spillway and splash basin sized to convey storm water runoff in excess of the 50 or 100 year storm event from the second pond into the natural stream channel